

Strategies for Success

Teachers and coaches frequently ask how to best prepare their students for the Science Bowl competition. There are various successful strategies your club can utilize. Here are just a few ideas and guidelines that may help.

Forming a Science Bowl Club

If your school doesn't already have a math and/or science club, start one as soon as possible. You don't have to have 30 students interested in science to make a Science Bowl Club. Getting one started usually takes a little effort, but once you get it going, they usually are very easy to keep going year after year. Also, once you do form one, make sure it is worth the student's time. Historically, the more successful teams at science competitions are made up of very enthusiastic students that come from schools with fun, well-organized Science Bowl Clubs (regardless of size). We are talking about quality not quantity.

Team Selection

Selection for your Science Bowl Team can be difficult. Each student should be knowledgeable in all of the 8 discipline areas. However, the more successful teams have students that are more specialized in different areas. For example: Student "A" might be better at math and computer science than the rest of his/her team. Student "B" might be better at physics and astronomy than the rest of his/her team. This will give your team a good balance with an "expert" in each of the 8 disciplines. It is also a good idea to have a few grade levels represented, not just seniors. By breaking up your team (3-4 juniors and/or seniors and 1-2 freshmen and/or sophomores) you will still have some veterans this year while giving a few rookies the necessary experience to carry your team next year. Some teachers let the students vote for team members based on knowledge, performance, and attendance. Others hold practice competitions to determine the team. It is ultimately up to you, so choose your team wisely. Most competitions allow non-participants to watch all the matches and to cheer their team's achievements.

Make a Schedule

Make an agenda or study schedule during your first meeting. Your team needs to decide how many hours they will spend per week in the practicing. Initially, practice times may be short, but as the competition nears you may want to schedule more intensive practices. The difficulty of the practice questions is more important than the length of time spent practicing. Brainstorm on what your team thinks are good ideas for review and practice. Decide how long your meetings will last. An hour meeting might be broken up with 30 minutes of review of the subject for the week, and 30 minutes of knowledge games. At least 2 practice competitions are recommended. This will help familiarize the students with the rapid fire, oral presentation for the questions (which is quite different from answering review questions from their text books). Keep the team enthusiastic and focused on the

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task at hand each week. Bring in science teachers or the school principal to act as practice moderators. Be sure the contest rules are adhered to stringently.

Example Schedule:

Week 1: Introduction/fun meeting. (make your schedule)
Week 2: Biology & Chemistry
Week 3: Math & Physics
Week 4: Earth Science, General Science, & Current events
Thanksgiving Break
Week 5: Astronomy & Computer Science
Week 6: Review Rules & Strategies
Week 7: Practice competition
Christmas Break
Week 8: Biology & Chemistry
Week 9: Math & Physics
Week 10: Computer Science & Astronomy
Week 11: Earth & General Sciences
Week 12: Review Rules, Strategies, & Eight Disciplines
Week 13: Practice Competition
Week 14: Practice Competition

Study Wisely

As mentioned earlier, each student needs to be familiar with all eight subjects. However, students should be concentrating the bulk of their studying/reviewing on their own, 2-4 areas of expertise. Students should concentrate their efforts on learning topics that questions are likely to come from. The oral toss-up questions must be answered in less than 5 seconds and the bonus questions must be answered in less than 20 seconds. Do not waste time studying problems that have long, time consuming solutions. Focus more time studying things like definitions, formulas, concepts, and short answer problems. By studying wisely the students will be able to spend more time practicing and learning to solve problems quickly.

Know the Rules & Game Playing Strategies

Make sure each student knows the rules of the competition. This cannot be stressed enough. Every year there is a team that loses points because the students don't know all the rules. Also teach them the strategies of the game for different situations. Believe it or not, this could be your ace in the hole. For example: if your team is in the lead during the second half of the game, recognize that the clock is now your ally. If you are awarded a bonus question, let the students take a few extra seconds to

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double check with each other to make sure they get the question right. The questions usually get harder as the match progresses. If they are too hasty with their decision, the lost ten bonus points could come back to haunt them in a close match. Being well versed in the rules and knowing all the strategies of the game, your team will have the edge in a close match and may even allow them to triumph over a better team that isn't as strategic.

Practice, Practice, Practice

There is no substitute for hard work and this means self-discipline and practice. Make an effort to duplicate an actual competition as much as possible. Also it is a good idea to rotate the person asking the questions each game. This will allow them to get experience hearing the questions come from different tones of voice, accents, and dialects. Don't wait until the month before the Regional Science Bowl to practice the competition. Use old test questions from your previous exams or even Trivial Pursuit and Jeopardy games if you have to. Just get them familiar answering the questions orally and waiting to be recognized before answering.

Keeping It Fun

Don't lose sight of the overall focus of getting your kids interested in science and math. Finding the right combination of fun games and interesting study tools could take a little work. There are many new and interesting ideas out there. The worldwide web is an excellent place to get some great knowledge games, CD-ROMs and interactive study tools. Just remember, the more students enjoy it, the more they'll want to do it, and the more successful they'll become. Given the proper motivation, preparation, and encouragement, your team will have a successful, and rewarding science bowl experience. You can then channel your Science Bowl Club's enthusiasm and momentum to do other fun things throughout the year. For example: the National Science Olympiad program, Math Counts, Odyssey of the Mind, or the Destination ImagiNation program.

Establish Team Goals

There can be only one winner of the National competition, but participation itself is important. Involve the students in the establishment of realistic goals for the team in this competition year. Celebrate and document these goals in posters and team practice sessions. Many National champions build on the success of each year until the championship is won.

Set goals that will challenge the team. Schools competing for the first time win many regional competitions. Don't be intimidated because your school has not participated in the past.

Miscellaneous

- Make sure the principal, teachers and administrative staff at your at your school know that the

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Science Bowl Club is an active program and that you are the person in charge.

- Find out about your school's policy regarding use of the school facilities and equipment. Do they allow use of shop facilities, computer lab, etc.?
- The lock-out buzzer system used in the National Science Bowl® is "The Quizzer". It is manufactured by Quizzer Limited and sold directly from their factory. Their address is:

Quizzer Limited
P.O. Box 8685
Madison, Wisconsin 53708
Telephone: 606-242-8805

Also suggested is a company called Zee Craft, which rents equipment. Their telephone number is 800-662-7475.

If your school has similar programs such as the knowledge bowl, their clubs may use comparable buzzer systems. Ask if you can borrow their equipment.

The last options recommended to practice with would simply be eight different fluorescent pieces of paper. The student can be acknowledged according to color.

- Official clocks to time the rounds of competition and the questions can be purchased from local sporting goods store or you may want to utilize the clock in the room. We recommend stopwatches to time questions.
- When practicing, set up the room the same as an actual competition room. (See picture)



- Get your students familiar with the roles of the officials.

Resources

Tips/Contacts

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- Inform your science club of current events in the subject areas used in competition, as well as energy related events.
- Some of the best resources are the Glossaries in the back of books.
- Some publishing companies offer complimentary textbooks to educators for review. The Heritage Institute was able to use books from these companies as a resource for our regional. Contact the sales representative from your region by e-mail or phone and ask for information to acquire these resources for your Science Bowl Clubs.
- National Science Bowl/DOE web site is www.doe.gov/sciencebowl/
- Publisher contacts:

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| McGraw Hill | 800-338-3987 | www.mcgraw-hill.com |
| Addison-Wesley | 781-944-3700 | |
| Prentice Hall | 201-236-7000 | www.prenhall.com |
| ITP | 800-876-2350 | x7068 |
| Franklin, Beedle & Associates, Inc. | 503-682-7668 | www.fbeedle.com |
| IDG | 800-228-4078 | |
| Jones and Bartlett Publishers Inc. | 978-443-5000 | www.jbpub.com |
| Harcourt Brace | 215-238-5500 | www.harcourt.com |

Reference Books - Your team might consider using:

BIOLOGY

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|-------------------------|----------------------|-------------------------|
| The Living Science | Miller-Levine | Prentice Hall |
| Human Biology | Chiras | Jones and Bartlett |
| Biology-The Web of Life | Strauss – Lisowski | Addison-Wesley |

PHYSICS

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|------------------------------|----------------------|-------------------------|
| Contemporary College Physics | Jones – Childers | McGraw-Hill |

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|---------------------------------|------------------------|----------------|
| College Physics 3 rd | Wilson – Buffa | Prentice Hall |
| Conceptual Physical Science | Hewitt-Suchocki-Hewitt | Addison-Wesley |

MATHEMATICS

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|---|-----------------------------|---------------------------|
| The Harper Collins-Mathematics Dictionary | E.J. Borowski & J.M Borwein | Harper Collins Publishing |
| Calculus | Farrand – Poxon | Harcourt Brace |
| Physics: Algebra/Trig | Hecht | ITP |

CHEMISTRY

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|---------------------|----------------------|-------------------------|
| Chemistry | Harold Nathan | IDG |
| Organic Chemistry | Frank Pellegrini | IDG |
| General Chemistry | Umland & Bellama | ITP |

GENERAL

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|--|----------------------|-------------------------|
| Living in the Environment | G. Tyler Miller, Jr. | ITP |
| Asking about Life | Tobin & Dusheck | Harcourt |
| The NY Public Library-Science Desk Reference | Macmillan | Any Bookstore |

EARTH

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|-----------------------|----------------------|-------------------------|
| Environmental Science | Nebel – Wright | Prentice Hall |
| Earth Then & Now | Montgomery - Dathe | McGraw-Hill |

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| Physical Geology | Mark Crawford | IDG |
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COMPUTER

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|---|----------------------|-------------------------|
| Microsoft Press- Computer Dictionary | | Any Bookstore |
| Webster's Dictionary- Computer Terms | | Any Bookstore |
| Computers Simplified | Ruth Mann | IDG |

ASTRONOMY

| <u>TITLE</u> | <u>AUTHOR</u> | <u>PUBLISHER</u> |
|-------------------------------------|----------------------|-------------------------|
| In Quest of the Universe | Karl F. Kuhn | Jones & Bartlett |
| Horizons- Exploring the Universe | Michael A. Seeds | ITP |
| The Cosmic Perspective | Bennett – Donahue | Addison Wesley |